

CLAIMS

1. A gas sensor comprising:

5 a sensor element formed extending in an axial direction and being to be exposed at a front end side to gas which is a measuring object;

10 a metallic shell holding the sensor element;

15 an outer sleeve connected, at its front end portion, with the metallic shell;

20 a plurality of electrode output terminals which are in electrically conductive relationship with the sensor element;

25 a plurality of lead wires connected to the electrode output terminals respectively;

30 a separator accommodated in the outer sleeve and setting therein the electrode output terminals individually while insulating them from one another; and

35 an elastic seal member having lead wire insertion holes through which the lead wires are inserted respectively, the elastic seal member being located in the outer sleeve closer to a rear end side than the separator,

40 wherein the separator is held in the outer sleeve so that it is urged toward a rear end while being in contact with a front end surface of the elastic seal member and an outer circumferential surface of the separator is in noncontact with an inner circumferential surface of the outer sleeve.

2. The gas sensor according to claim 1, wherein

45 the separator includes a rear-end-side portion positioned on the rear end side, a front-end-side portion positioned on a front end side, and a flange portion positioned between the rear-end-side portion and the front-end-side portion, the flange portion being larger in diameter than the

rear-end-side portion and the front-end-side portion and including a front-end-side surface that is formed on a side of the front-end-side portion and faces toward the front end side, and

5 the separator is held between the elastic seal member and an urging member while it is urged toward the rear end in contact relation with the front end surface of the elastic seal member by the urging member applying a pressing force on the front-end-side surface of the flange portion toward the front end surface of the elastic seal member.

10 3. The gas sensor according to claim 2, wherein

the urging member is located on an outer periphery of the front-end-side portion of the separator and urges the separator toward the rear end by a deformed portion having been deformed into inwardly convex shape resulting from radially inward pressing of a portion of the outer 15 sleeve positioned radially outside the urging member.

4. The gas sensor according to claim 2 or 3, wherein

the sensor element is of a plate shape and has a plurality of electrode terminal portions on a front and back surfaces on the rear end side,

20 the electrode output terminals are fixedly held between the separator and the sensor element while the electrode output terminals are in contact with the corresponding electrode terminal portions of the sensor element, and

25 a contact portion between each electrode output terminal and each electrode terminal portion of the sensor element and a supported portion of the separator by the urging member are positioned in an offset relation to each other in the axial direction of the gas sensor.

5. The gas sensor according to any one of claims 1 to 4, wherein the outer circumferential surface of the separator and the inner circumferential surface of the outer sleeve are spaced 0.5 mm or more in a radial direction.

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6. The gas sensor according to any one of claims 1 to 5, wherein a rear end surface of the separator is formed in a shape recessed radially inwardly from a peripheral edge, and
10 the separator is held in the outer sleeve so that the peripheral edge of the rear end surface is in contact with the front end surface of the elastic seal member.